UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,321	10/31/2003	Haruo Yoshida	Q77859	8510

23373 7590 05/05/2005

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER	
LE, TOAN M	

ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/697,321	YOSHIDA ET AL.	
	Examiner	Art Unit	
	Toan M Le	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-60* is/are pending in the application.

4a) Of the above claim(s) *12-25 and 48-60* is/are withdrawn from consideration.

5)☒ Claim(s) *46 and 47* is/are allowed.

6)☒ Claim(s) *1-11 and 26-43* is/are rejected.

7)☒ Claim(s) *44 and 45* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Applicant's election without traverse of Group I, claims 1-11 and 26-47 in the reply filed on March 10, 2005 is acknowledged.

Claim Objections

Claims 10 and 11 are objected to because of the following informalities:

Claims 10 and 11, line 1, "claim 11" should read -claim 1-.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-11, 26-43 are rejected under 35 U.S.C. 102(b) as being anticipated by "Automation of NIST frequency Calibration at Remote Sites", Lombardi (referred hereafter Lombardi).

Referring to claim 1, Lombardi discloses a measuring-instrument remote-calibration system for remotely calibrating a measuring instrument (Abstract), comprising:

converting means for converting, a physical standard used as a measuring reference into a transmission signal and for transmitting the signal through a first communication medium (page 618, 2nd col., 2nd, 3rd, and 4th paragraphs); and

calibrating means for receiving and restoring the transmission signal to the measuring reference, and for performing calibration on the measuring instrument based on the measuring

reference (page 618, 2nd col., 2nd, 3rd, and 4th paragraphs; page 619, 2nd col., section 3: 1st paragraph).

As to claim 2, Lombardi discloses a measuring-instrument remote-calibration system for remotely calibrating a measuring instrument (Abstract), wherein the converting means is located at a standard authority, the calibrating means is located at a remote location (page 618, 2nd col., last paragraph), and the standard authority provides certification of the calibration (page 620, 2nd col., section 4: 1st paragraph).

Referring to claim 3, Lombardi discloses a measuring-instrument remote-calibration system for remotely calibrating a measuring instrument (Abstract), wherein results of the calibration are sent from the remote location to the standard authority via a second communication medium (page 620, 2nd col., section 4: 1st paragraph).

As to claim 4, Lombardi discloses a measuring-instrument remote-calibration system for remotely calibrating a measuring instrument (Abstract), wherein the first and second communication mediums are the same (page 618, 2nd col., 2nd and 3rd paragraph).

Referring to claim 5, Lombardi discloses a measuring-instrument remote-calibration system for remotely calibrating a measuring instrument (Abstract), wherein the first and second communication mediums are different (page 620, 2nd col., section 4: 1st paragraph).

As to claim 6, Lombardi discloses a measuring-instrument remote-calibration system for remotely calibrating a measuring instrument (Abstract), wherein the physical standard is related to frequency information (figure 1; page 619, 2nd col., section 3: 1st and 2nd paragraphs).

Referring to claim 7, Lombardi discloses a measuring-instrument remote-calibration system for remotely calibrating a measuring instrument (Abstract), wherein:

the converting means comprises a converting unit and a communication unit located at a standard authority (page 618, 2nd col., 2nd and 3rd paragraphs); and

the calibrating means comprises a reception unit and a calibration unit located at a remote location (page 618, 2nd col., 4th paragraph; figure 1).

As to claim 8, Lombardi discloses a measuring-instrument remote-calibration system for remotely calibrating a measuring instrument (Abstract), wherein the standard authority is the highest national calibration authority (Abstract).

Referring to claim 9, Lombardi discloses a measuring-instrument remote-calibration system for remotely calibrating a measuring instrument (Abstract), wherein the remote location is located overseas, relative to the standard authority (page 619, 1st col., 1st paragraph).

As to claim 10, Lombardi discloses a measuring-instrument remote-calibration system for remotely calibrating a measuring instrument (Abstract), wherein the standard authority performs the certification in accordance with the result of precise measurement involving uncertainty evaluation based on the calibration (page 620, 2nd col., section 4: 1st paragraph).

Referring to claim 11, Lombardi discloses a measuring-instrument remote-calibration system for remotely calibrating a measuring instrument (Abstract), further comprising a remote calibrating network for linking the standard authority and the remote place, wherein a confirmation of the calibration operation and a confirmation of the precision of the standard are performed by mutually monitoring identical standards retained by a plurality of authorities linked to said remote calibrating network (page 618, 1st col., section 1: 1st paragraph; page 618, 2nd col., 2nd and 3rd paragraphs).

As to claim 26, Lombardi discloses a measuring instrument remote calibration method (Abstract) comprising:

converting a physical standard used as a measuring reference into a transmission signal;

transmitting the transmission signal by a communication means (page 618, 2nd col., 2nd, 3rd, and 4th paragraphs);

receiving the transmission signal; restoring the measuring reference from the transmission signal; and

performing calibration based on the measuring reference (page 618, 2nd col., 2nd, 3rd, and 4th paragraphs; page 619, 2nd col., section 3: 1st paragraph).

Referring to claim 27, Lombardi discloses a measuring instrument remote calibration method (Abstract), further comprising performing certification, in accordance with results of the calibration (page 620, 2nd col., section 4: 1st paragraph), wherein:

the steps of converting a physical standard and performing certification are performed at a standard authority (page 618, 2nd col., last paragraph); and

the steps of restoring the measuring reference and performing calibration are performed at a remote location (page 618, 2nd col., 2nd, 3rd, and 4th paragraphs; page 619, 2nd col., section 3: 1st paragraph).

As to claim 28, Lombardi discloses a measuring instrument remote calibration method (Abstract), further comprising transmitting results of the calibration from the remote location to the standard authority; and transmitting a certification certificate from the standard authority to the remote location (page 620, 2nd col., 1st paragraph; section 4: 1st paragraph).

Referring to claim 29, Lombardi discloses a measuring instrument remote calibration method (Abstract), wherein the steps of transmitting the transmission signal, transmitting results of the calibration, and transmitting a certification certificate are all performed within a single type of communication medium (page 618, 2nd col., 2nd and 3rd paragraphs).

As to claim 30, Lombardi discloses a measuring instrument remote calibration method (Abstract), wherein the steps of transmitting the transmission signal, transmitting results of the calibration, and transmitting a certification certificate are performed within various types of communication mediums (page 620, 2nd col., section 4: 1st paragraph).

Referring to claim 31, Lombardi discloses a measuring instrument remote calibration method (Abstract), wherein the standard authority is the highest national calibration authority (Abstract).

As to claim 32, Lombardi discloses a measuring instrument remote calibration method (Abstract), wherein the remote location is located overseas, relative to the standard authority (page 619, 1st col., 1st paragraph).

Referring to claim 33, Lombardi discloses a measuring instrument remote calibration method (Abstract), wherein the step of performing certification is accomplished in accordance with the result of precise measurement involving uncertainty evaluation based on the step of performing calibration (page 620, 2nd col., section 4: 1st paragraph).

As to claim 34, Lombardi discloses a measuring instrument remote calibration method (Abstract), further comprising confirming the precision of the calibration by performing mutual monitoring of identical standards retained by a plurality of standard authorities linked to a remote

calibrating network (page 618, 1st col., section 1: 1st paragraph; page 618, 2nd col., 2nd and 3rd paragraphs).

Referring to claim 35, Lombardi discloses a measuring instrument remote calibration method (Abstract) wherein, in the step of performing the mutual monitoring, the mutual monitoring is performed between standard authorities nationally and internationally (page 618, 1st col., section 1: 1st paragraph; page 618, 2nd col., 2nd paragraph).

As to claim 36, Lombardi discloses a measuring instrument remote calibration method (Abstract) wherein:

the standard authority stores highly accurate standards (page 619, 2nd col., section 3: 1st paragraph);

the measuring reference is frequency based (page 619, 2nd col., section 3: 1st paragraph); and

the certification result is transmitted from the standard authority to the remote location by a communication medium (page 620, 2nd col., section 4: 1st paragraph).

Referring to claim 37, Lombardi discloses a measuring instrument remote calibration method (Abstract), wherein the standard authority and the remote location:

are positioned so that a satellite is simultaneously observed; and

perform frequency calibration by utilizing a signal transmitted from a signal source in the satellite (page 621, 2nd col., 1st paragraph).

As to claim 38, Lombardi discloses a measuring instrument remote calibration method (Abstract), wherein the standard authority and the remote location:

are positioned so that a satellite is simultaneously observed; and

the frequency standard is restored at the remote location by comparing a reference clock signal included in a signal source in the satellite and a frequency-divided signal from a frequency-controllable oscillator, and feeding back the frequency-divided signal to the frequency-controllable oscillator so that an error signal between both signals is zero (figure 1; page 619, 1st col., section 2: 1st and 2nd paragraphs; section 3: 1st and 2nd paragraphs).

Referring to claim 39, Lombardi discloses a measuring instrument remote calibration method (Abstract), wherein the satellite is one of a global positioning system satellite and a quasi-zenith satellite (page 621, 2nd col., 1st paragraph).

As to claim 40, Lombardi discloses a measuring instrument remote calibration method (Abstract), wherein the satellite is one of a global positioning system satellite and a quasi-zenith satellite (page 621, 2nd col., 1st paragraph).

Referring to claim 41, Lombardi discloses a measuring instrument remote calibration method (Abstract), wherein reception of a plurality of pieces of frequency information from the satellite minimizes an error based on a radio wave propagation delay time caused by dielectric material including a cloud or water vapor positioned between a receiver on the ground and a radio wave transmitter provided in the satellite in a state in which the satellite is over the receiver (page 619, 2nd col., last paragraph).

As to claim 42, Lombardi discloses a measuring instrument remote calibration method (Abstract), wherein reception of a plurality of pieces of frequency information from the satellite minimizes an error based on a radio wave propagation delay time caused by dielectric material including a cloud or water vapor positioned between a receiver on the ground and a radio wave

transmitter provided in the satellite in a state in which the satellite is over the receiver (page 619, 2nd col., last paragraph).

Referring to claim 43, Lombardi discloses a measuring instrument remote calibration method (Abstract), wherein, in the step of restoring the measuring reference, a physical quantity directly linked to the frequency is restored by physical law at the remote location (figure 1).

Claims 44-45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Allowable Subject Matter

Claims 46-47 are allowed.

The primary reason for allowance of the claim 46-47 is the inclusion of integrating an optical communication path with a physical standard generating means to transmit the physical standard to a calibrated authority at a remote place wherein the transmitted physical standard is restored in performing calibration with a transmitting certificate result from the authority to the calibrated authority.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

"High Precision Comparison Between SNS and SIS Josephson Voltage Standard", Jeanneret et al., IEEE Transactions on Instrumentation and Measurements, Vol. 50, No. 2, April 2001, Pages 188-209

"Optimized 1 V and 10 V Josephson Series Arrays", Muller et al., IEEE Transactions on Instrumentation and Measurement, Vol. 46, No. 2, April 1997, Pages 229-232

"Frequency Response Metrology for High-Speed Optical Receivers", Hale et al., National Institute of Standards and technology, date unknown

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan M Le whose telephone number is (571) 272-2276. The examiner can normally be reached on Monday through Friday from 9:00 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Toan Le

April 25, 2005

John Barlow
Supervisory Patent Examiner
Technology Center 2800